



September 4, 2019

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Preliminary Permit Application for the Owyhee Pumped Storage Project

Dear Ms. Bose,

Owyhee Energy Storage, LLC is pleased to submit the following application for preliminary permit for the Owyhee Pumped Storage Project. If you have any questions or need additional information, please contact me at (415) 602-2569 or lresta@rplusenergies.com.

Sincerely,

/s/ Luigi Resta

Luigi Resta
President, rPlus Energies, LLC
For Owyhee Energy Storage, LLC

Application for Preliminary Permit
for the
Owyhee Pumped Storage Project

Owyhee Energy Storage, LLC

VERIFICATION STATEMENT

This application for a preliminary permit is executed in the

State of Utah

County of Salt Lake

by: Luigi Resta
Owyhee Energy Storage, LLC
201 S. Main St., Ste. 2000
Salt Lake City, UT 84111

being duly sworn, depose(s) and say(s) that the contents of this Preliminary Permit Application are true to the best of (his or her) knowledge or belief. The undersigned Applicant has signed the application this 4th day of September, 2019.

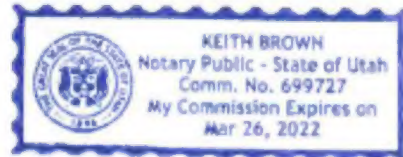
Applicant

By: Luigi Resta

Subscribed and sworn to before me, a Notary Public of the State of Utah, this 30 day of August, 2019.

Keith Brown

(Notary Public, or other authorized official)



Date: 08/30/2019
Receipt Number: 7990652
Amount Paid: \$580.00

EXPEDITE

CERTIFICATE OF ORGANIZATION

OF

OWYHEE ENERGY STORAGE, LLC

RECEIVED

AUG 30 2019

Utah Div. of Corp. & Comm. Code



The undersigned, acting pursuant to the Utah Revised Uniform Limited Liability Company Act, adopts the following Certificate of Organization for the purpose of organizing a Utah limited liability company (the "Company"):

FIRST: The Company's name is:

Owyhee Energy Storage, LLC

SECOND: The address of the initial principal office of the Company is 201 South Main Street, Suite 2000, Salt Lake City, Utah 84111

THIRD: The name and address of its initial registered agent is Christian Gardner, 201 South Main Street, Suite 2000, Salt Lake City, Utah 84111

IN WITNESS WHEREOF, the undersigned organizer of Owyhee Energy Storage, LLC, has executed this Certificate of Organization as of this 30th day of August, 2019.

Luigi Resta
Organizer

AUG 30 '19 PM 12:00

**PRELIMINARY PERMIT APPLICATION
FOR THE
OWYHEE PUMPED STORAGE PROJECT**

TABLE OF CONTENTS

Initial Statement	6
Section 4.32(a) Identification	7
Section 4.81Exhibits	9
Exhibit 1: Description of the Proposed Project	9
Exhibit 2a: Description of Proposed Studies	14
Exhibit 2b: Statement of Costs and Financing	16
Exhibit 3: Project Maps	17
Exhibit 4: FERC Form 587.....	19

§4.81 (a) Initial Statement

(1) Owyhee Energy Storage, LLC, a Utah limited liability company ("Applicant") applies to the Federal Energy Regulatory Commission ("FERC") for a preliminary permit for the proposed Owyhee Pumped Storage Project ("Project"), as described in the attached exhibits. This application is made in order that the Applicant may secure and maintain priority of application for a license for this Project under Part I of the Federal Power Act while obtaining the data and performing the acts required to determine the feasibility of the Project and to support an application for a license.

(2) The location of the proposed project is:

State or Territory:	Oregon
County:	Malheur
Township or nearby town:	Adrian, OR
Stream or other body of water:	Lake Owyhee (Owyhee Reservoir)

(3) The exact name, business address, and telephone number of the Applicant is:

Owyhee Energy Storage, LLC
201 S. Main St., Ste. 2000
Salt Lake City, UT 84111
Phone: (415) 602-2569

The exact name and business address of each person authorized to act as an agent for the Applicant in this application is:

Owyhee Energy Storage, LLC
201 S. Main St., Ste. 2000
Salt Lake City, UT 84111
Phone: (415) 602-2569
lresta@rplusenergies.com

(4) Owyhee Energy Storage, LLC is a domestic corporation and is not claiming preference under section 7(a) of the Federal Power Act.

(5) The proposed term of the requested permit is 48 months.

(6) The existing dam associated with the Project is the Owyhee Dam, which is operated by the Owyhee Irrigation District. The original authorizing purpose for the Owyhee Project, of which the Owyhee Dam was a part, was irrigation. 15 megawatts of power production capacity was installed at the dam between 1985 and 1993.

§4.32. IDENTIFICATION

(1). For a preliminary permit or license, identify every person, citizen, association of citizens, domestic corporation, municipality, or state that has or intends to obtain and will maintain any proprietary right necessary to construct, operate, or maintain the project;

Owyhee Energy Storage, LLC
201 S. Main St., Ste. 2000
Salt Lake City, UT 84111

(2)(i). Every county in which any part of the project, and any Federal facilities that would be used by the project, would be located:

The Project will be located in Malheur County, Oregon.

Malheur County
County Clerk/Recorder
251 "B" St. West
Vale, OR 97918

(2)(ii). Every city, town, or similar local political subdivision:

(A) In which any part of the project, and any Federal facilities that would be used by the project, would be located:

The Project will not be located within the boundaries of any city, town, or similar local subdivision.

(B) Cities, towns, or similar subdivision (5,000 people or more) within a 15-mile radius of the project dam:

There are no cities, towns, or similar subdivisions of a population of 5,000 people or more within a 15-mile radius of the project dam.

(iii) Every irrigation district, drainage district, or similar special purpose political subdivision:

(A) In which any part of the project, and any Federal facilities that would be used by the project, would be located; or

(B) That owns, operates, maintains, or uses any project facilities or any Federal facilities that would be used by the project;

Owyhee Irrigation District
17 S. First St.
Nyssa, OR 97913

(iv) Every other political subdivision in the general area of the project that there is reason to believe would likely be interested in, or affected by, the application:

Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, OR 97301

Oregon Department of Environmental Quality
811 SW 6th Avenue
Portland, OR 97204

Oregon Department of Energy
625 Marion St. NE
Salem, OR 97301-3737

Oregon Department of Fish and Wildlife
3406 Cherry Avenue N.E.
Salem, OR 97303

Oregon Parks & Recreation Department
State Parks
725 Summer Street NE, Suite C
Salem, OR 97301

(v) All Indian tribes that may be affected by the project.

Burns Paiute Tribe
H.C. 71 100 Pasigo St.
Burns, OR 97720

§ 4.81 (b) Exhibits**EXHIBIT 1: DESCRIPTION OF THE PROPOSED PROJECT**

The Project will consist of a new artificial, lined reservoir created by the construction of an embankment and utilized in conjunction with the existing Lake Owyhee, a reservoir developed for irrigation purposes. The new reservoir will be joined with Lake Owyhee by approximately 14,100 feet of conduit. Maximum hydraulic head for the project would be 1,670 feet.

Equipment would consist of three 200 MW reversible pump-turbines, totaling 600 MW of generating capacity. The Project will propose to interconnect with either the planned Boardman-Hemingway 500 kV line, or the existing Summer Lake-Midpoint 500 kV line, the point of interconnection being 2.5 to 8 transmission-miles from the project. Annual energy production is expected to be approximately 946,080 megawatt-hours (MWh).

Dams

	Height (ft)	Length at Crest (ft)	Type
Upper Reservoir Dam 43.596,-117.211	105	1,260	Zoned earth and rockfill dam OR concrete-face rockfill dam (CFRD)
Owyhee Dam (existing) 43.64,-117.24	470	833	Concrete Arch

Upper Reservoir

	MSL	Volume (AF)	Surface Area (ac)
Upper Reservoir	4,330	3,410	85
Lower Reservoir (Lake Owyhee)	2,650	1,120,000	13,900

Conduits

	Length (ft)	Diameter (ft)	Lining
Low-Pressure Tunnel	2,200	17	Concrete-lined
Pressure Shaft	7,100	17	Concrete/Steel lined
Tailrace	4,800	20	Concrete-lined
Lake Owyhee Outlet/Intake	The intake/outlet structure is tentatively assumed to be a concrete-structure lake tap equipped with a fish screen. The specific design and dimensions will be addressed during engineering studies.		

Powerhouse

The underground powerhouse would tentatively be located approximately 4,800 feet east of Lake Owyhee, at an elevation of approximately 2,400 feet.

Tentative dimensions for the powerhouse are 80 feet long by 280 feet wide by 120 feet high. The powerhouse will be constructed out of bedrock and include concrete and steel formwork.

Coordinates for the tentative powerhouse locations are as follows: 43.616, -117.223

Age and Condition of the Existing Dam (Owyhee Dam)

The Owyhee Dam was constructed between 1928 and 1933, so is currently 86 years old. Its construction was authorized for irrigation purposes, although flood control is a secondary function. To our knowledge, no structural issues have been identified that would preclude continued operation of the dam for the foreseeable future. The dam is currently operated by the Owyhee Irrigation District in cooperation with the South Board of Control.

The Owyhee Irrigation District also operates three small hydroelectric power facilities at the facility, under FERC license, totaling 15 MW in capacity.

Transmission Lines

The Project will propose to interconnect with either the existing Midpoint-Hemingway-Summer Lake 500 kV line or the planned Boardman-Hemingway 500 kV line. Interconnection will be via double-circuit 230 kV line 2.6 to 8 miles in length.

If the currently proposed route of Boardman-Hemingway is built, the project generation interconnection line would be 8 miles in length, including 2.5 miles from the powerhouse to the Midpoint-Hemingway-Summer Lake corridor. The gen-tie would parallel the existing 500 kV line in that corridor to the point where would intersect with the Boardman-Hemingway line. At that point, a 230/500 kV transformer and loop-in substation would be constructed.

The anticipated right-of-way requirement for the transmission line is 160 feet.

Water Source

The Project will physically source its initial fill water and evaporation loss recovery water from the Owyhee Reservoir, with rights for use of that water to be leased from existing water rights holders.

Operation

The Project will be operated to provide fast-response firm capacity to regional markets, along with support to new renewable resources being interconnected to the regional transmission grid currently and in the future. These resources—predominantly wind and solar energy—are emissions-free and increase energy security, but are variable and intermittent in nature. The

Project will use the dynamic capabilities of pumped storage to aid in the efficient integration of variable and intermittent renewable resources from both an operational and economic standpoint.

Federal Lands

The Project will be located almost entirely on land managed by the Bureau of Land Management. Lands along the Lake Owyhee shore are managed by the Bureau of Reclamation. The sections affected are indicated in Exhibit 4. The legal descriptions of the federal lands affected by the Project are tabulated on the following two sheets.

Federal Lands Within Study Boundary

PLSS Description	Agency	Acres
T22S R45E		
<u>Section 21</u>		
SE1/4	BLM	160
<u>Section 22</u>		
SE1/4	BLM	160
SW1/4	BLM	160
<u>Section 23</u>		
SE1/4	BLM	160
SW1/4	BLM	160
<u>Section 25</u>		
All	BLM	640
<u>Section 26</u>		
All	BLM	640
<u>Section 27</u>		
All	BLM	640
<u>Section 28</u>		
NE1/4	BLM	160
NW1/4	USBR	158.86
SE1/4	BLM	160
NE1/4 SW1/4	BLM	40
SE1/4 SW1/4	BLM	40
<u>Section 33</u>		
NE1/4	BLM	160
SE1/4	BLM	160
NE1/4 NW1/4	BLM	40
<u>Section 34</u>		
NW1/4	BLM	160
SW1/4	BLM	160

<u>PLSS Description</u>	<u>Agency</u>	<u>Acres</u>
-------------------------	---------------	--------------

T22S R46ESection 29

SW1/4	BLM	160
-------	-----	-----

Section 30

SE1/4	BLM	160
-------	-----	-----

SW1/4	BLM	160
-------	-----	-----

NW1/4	BLM	160
-------	-----	-----

Section 31

NE1/4	BLM	160
-------	-----	-----

NW1/4	BLM	160
-------	-----	-----

T23S R45ESection 3

All	BLM	640
-----	-----	-----

Section 4

NE1/4	BLM	160
-------	-----	-----

SE1/4	BLM	160
-------	-----	-----

Section 9

NE1/4	BLM	160
-------	-----	-----

SE1/4	BLM	160
-------	-----	-----

Section 10

All	BLM	640
-----	-----	-----

Department of the Interior
Bureau of Land Management
Vale District Office
100 Oregon St.
Vale, OR 97918

U.S. Bureau of Reclamation
1150 N. Curtis Road, Ste. 100
Boise, ID 83706-1234

§4.81 (c) EXHIBIT 2a: DESCRIPTION OF STUDIES**(1) General****(i) Study Plan**

The Applicant plans to engage in the following studies in order to design the technical aspects of the project and to confirm its economic viability:

- Project land surveys
- Environmental impact studies
- Archaeological studies
- Groundwater studies
- Energy production studies
- Water quality studies
- Water rights studies
- Engineering studies, including soil studies, test pits and core holes.
- Study on the energy market for the project
- Transmission interconnection studies
- Determination of equipment configuration and sizing
- Cost estimates

Additional studies may be required as the need arises.

(ii) New Roads

No new roads will be needed for the purpose of conducting the studies described in this exhibit.

(2) Work Plan for New Dam Construction**(i) Description of field studies, tests, and other land disturbing activities**

A subsurface investigation will be required to determine the rock structure and stability for the proposed dam sites. Samples shall be checked for rock structure as well as determine the suitability for project features for the dams and power tunnels. The Applicant proposes to use existing roads located within the project boundary to minimize or eliminate the potential for any land disturbing activities. Publicly available geological data will be utilized to the greatest extent possible. Appropriate measures will be taken to restore areas that could potentially be altered or disturbed as a result of these activities. Appropriate measures are expected to include a plan to implement erosion control, backfilling of core borings, augur borings, and test pits, refurbishing of any disturbed vegetation and appropriate disposal of any drill materials.

(ii) Studies Schedule

Work Item	Schedule	
	Month Beginning	Month Ending
Engineering		
Conceptual refinement and evaluation of alternatives	0	6
Initial scoping and consultation	0	8
Engineering studies	0	24
Environmental studies	0	24
Archaeological studies	6	12
Geological investigations	8	16
Selection of equipment	16	18
Environmental		
Agency consultation	0	6
Environmental studies	6	20
Prepare draft application	12	24
Other		
Land & ROW	0	24
Water rights studies	0	36
Transmission interconnection planning	6	24
Cost estimating, economic feasibility, and financial planning investigations	8	24
Power sales marketing	12	24
Additional stage consultation and documentation	20	36

This schedule may be adjusted and supplemented depending on need and contingencies that may develop as studies proceed.

(3) Request for Waiver

It is anticipated that preliminary field studies, tests, and other activities to be conducted under the permit would not adversely affect cultural resources or endangered species and would cause only minor alterations or disturbances of lands and waters, and that any land altered or disturbed would be adequately restored. This is particularly true since only an upper reservoir is required to be constructed for this project. The Applicant therefore requests waiver of the full requirements of 18 CFR § 4.81 (c)(2).

§4.81 (c) EXHIBIT 2b: Statement of Costs and Financing**i. Estimated cost of studies**

The estimated cost of carrying out and preparing the studies, investigations, tests, surveys, maps, plans and specifications described in this application is estimated to be between \$500,000 and \$750,000.

ii. Expected sources of financing

The expected sources of financing to conduct the studies described in this application are private investors.

§4.81 (d) EXHIBIT 3: PROJECT MAPS

Notes:

1. No areas within the study boundary are designated as wilderness area or wilderness study area, or recommended for designation as wilderness areas.
2. No areas within the study boundary are included in or have been designated for study for inclusion in the National Wild and Scenic Rivers System.

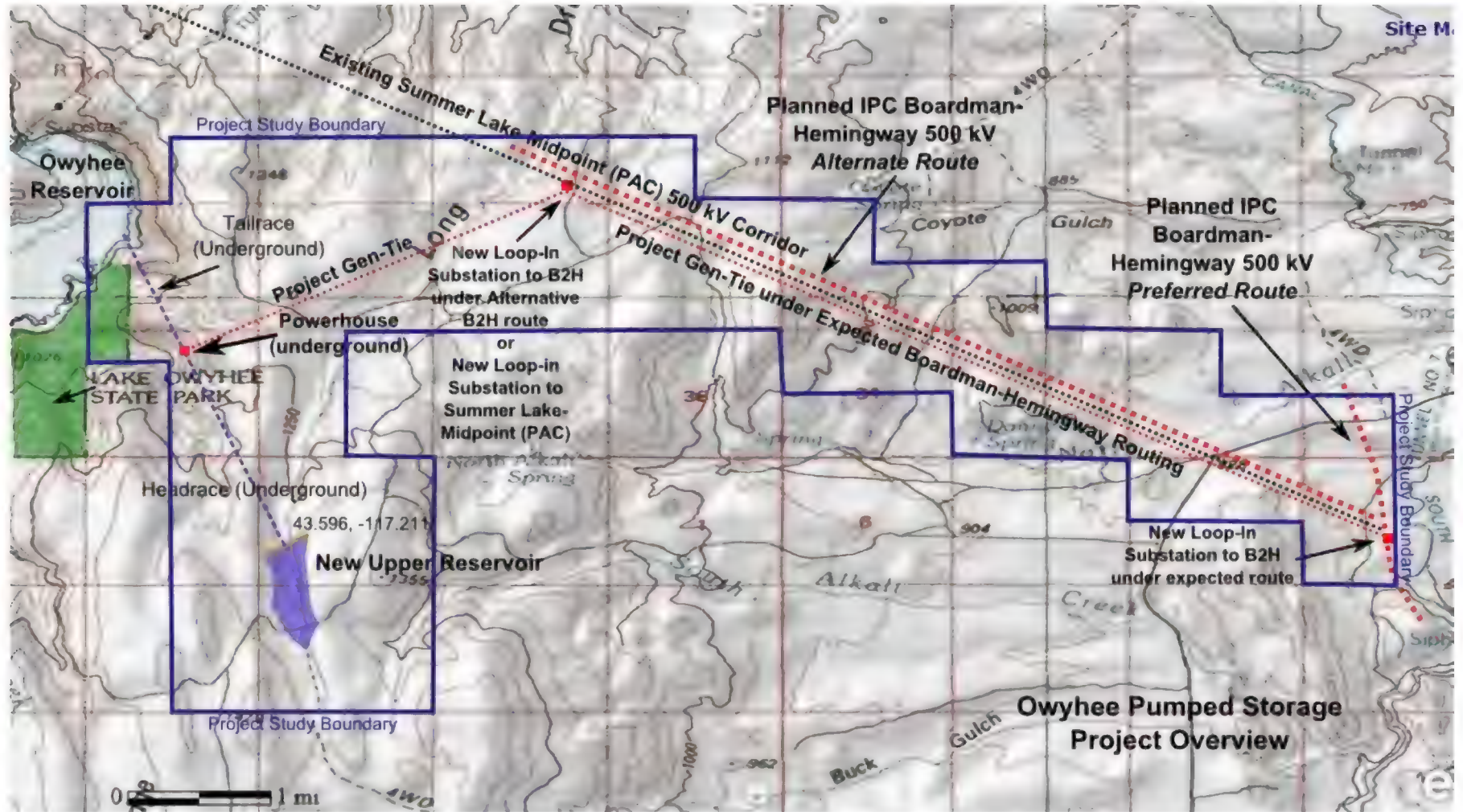


Exhibit 4: Section 4.81(b)(5) Federal Lands

Form FERC-587
OMB No. 1902-0145
(Expires 10/31/2018)

**LAND DESCRIPTION
Public Land States
(Rectangular Survey System Lands)**

1. STATE Oregon 2. FERC PROJECT NO. _____

3. TOWNSHIP T22S RANGE R45E MERIDIAN Willamette

4. Check one:

☐ License
☒ Preliminary Permit

Check one:

☒ Pending
☐ Issued

If preliminary permit is issued, give expiration date: _____

5. EXHIBIT SHEET NUMBERS OR LETTERS

Section 6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22 EXHIBIT 1	23 EXHIBIT 1	24
30	29	28 EXHIBIT 1	27 EXHIBIT 1	26 EXHIBIT 1	25 EXHIBIT 1
31	32	33 EXHIBIT 1	34 EXHIBIT 1	35	36

6. contact's name Luigi Resta

telephone no. (415) 602-2569

Date submitted September 4, 2019

Form FERC-587
OMB No. 1902-0145
(Expires 10/31/2018)

LAND DESCRIPTION
Public Land States
(Rectangular Survey System Lands)

1. STATE Oregon 2. FERC PROJECT NO. _____

3. TOWNSHIP T22S RANGE R46E MERIDIAN Willamette

4. Check one:

☐ License
☒ Preliminary Permit

Check one:

☒ Pending
☐ Issued

If preliminary permit is issued, give expiration date: _____

5. EXHIBIT SHEET NUMBERS OR LETTERS

Section 6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30 EXHIBIT 1	29 EXHIBIT 1	28	27	26	25
31 EXHIBIT 1	32	33	34	35	36

6. contact's name Luigi Resta

telephone no. (415) 602-2569

Date submitted September 4, 2019

Form FERC-587
OMB No. 1902-0145
(Expires 10/31/2018)

LAND DESCRIPTION
Public Land States
(Rectangular Survey System Lands)

1. STATE Oregon 2. FERC PROJECT NO. _____

3. TOWNSHIP T23S RANGE R45E MERIDIAN Willamette

4. Check one:

☐ License
☒ Preliminary Permit

Check one:

☒ Pending
☐ Issued

If preliminary permit is issued, give expiration date: _____

5. EXHIBIT SHEET NUMBERS OR LETTERS

Section 6	5	4 EXHIBIT 1	3 EXHIBIT 1	2	1
7	8	9 EXHIBIT 1	10 EXHIBIT 1	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

6. contact's name Luigi Resta

telephone no. (415) 602-2569

Date submitted September 4, 2019

Document Content(s)

Prelim Permit App - Owyhee Pumped Storage.PDF.....1